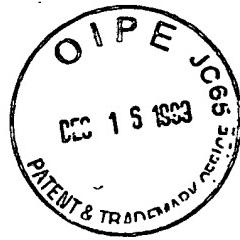


## SEQUENCE LISTING



<110> Olwin, Bradley B.  
Rosenthal, Richard S.

<120> CHIMERIC FIBROBLAST GROWTH FACTOR PROTEINS, NUCLEIC  
ACID MOLECULES, AND USES THEREOF

<130> 2848-32

<140> Not Yet Assigned

<141> 1999-08-19

<150> 60/097,160

<151> 1998-08-19

<160> 27

<170> PatentIn Ver. 2.0

<210> 1

<211> 556

<212> DNA

<213> chimeric sequence

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<221> CDS

<222> (8)..(553)

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tgg aaa aag gcg gct gct ggt tct atc act acc ctg cca gct ctg cca 97  
Trp Lys Lys Ala Ala Gly Ser Ile Thr Thr Leu Pro Ala Leu Pro  
15 20 25 30

gaa gac ggt ggt tct ggt gcc ttc cca cca ggt cac ttc aaa gac cca 145  
Glu Asp Gly Gly Ser Gly Ala Phe Pro Pro Gly His Phe Lys Asp Pro  
35 40 45

aaa cgt ctg tac tgc aaa aac ggt ggt ttc ttc ctg cgc atc cac ccc 193  
Lys Arg Leu Tyr Cys Lys Asn Gly Phe Phe Leu Arg Ile His Pro  
50 55 60

gac ggc cga gtg gac ggg gtc cgc gag aag agc gac cca cac atc aaa 241  
Asp Gly Arg Val Asp Gly Val Arg Glu Lys Ser Asp Pro His Ile Lys

65

70

75

cta caa ctt caa gca gaa gag aga ggg gtt gtg tct atc aaa gga gtg 289  
 Leu Gln Leu Gln Ala Glu Glu Arg Gly Val Val Ser Ile Lys Gly Val  
 80 85 90

tgt gca aac cgt tac ctt gct atg aaa gaa gat gga aga tta cta gct 337  
 Cys Ala Asn Arg Tyr Leu Ala Met Lys Glu Asp Gly Arg Leu Leu Ala  
 95 100 105 110

tct aaa tgt gtt aca gac gag tgt ttc ttt ttt gaa cga ttg gag tct 385  
 Ser Lys Cys Val Thr Asp Glu Cys Phe Phe Glu Arg Leu Glu Ser  
 115 120 125

aat aac tac aat act tac cgg tca agg aaa tac acc agt tgg tat gtg 433  
 Asn Asn Tyr Asn Thr Tyr Arg Ser Arg Lys Tyr Thr Ser Trp Tyr Val  
 130 135 140

gca ctg aaa cga act ggg cag tat aaa ctt gga tcc aaa aca gga cct 481  
 Ala Leu Lys Arg Thr Gly Gln Tyr Lys Leu Gly Ser Lys Thr Gly Pro  
 145 150 155

ggg cag aaa gct ata ctt ttt ctt cca atg tct gct aag agc gaa cag 529  
 Gly Gln Lys Ala Ile Leu Phe Leu Pro Met Ser Ala Lys Ser Glu Gln  
 160 165 170

aaa ctc atc tct gaa gag gat ctg tga 556  
 Lys Leu Ile Ser Glu Glu Asp Leu  
 175 180

<210> 2  
<211> 182  
<212> PRT  
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Lys Ala Ala Ala Gly Ser Ile Thr Thr Leu Pro Ala Leu Pro Glu Asp  
 20 25 30

Gly Gly Ser Gly Ala Phe Pro Pro Gly His Phe Lys Asp Pro Lys Arg  
 35 40 45

Leu Tyr Cys Lys Asn Gly Gly Phe Phe Leu Arg Ile His Pr Asp Gly  
 50 55 60

Arg Val Asp Gly Val Arg Glu Lys Ser Asp Pro His Ile Lys Leu Gln  
65 70 75 80

Leu Gln Ala Glu Glu Arg Gly Val Val Ser Ile Lys Gly Val Cys Ala  
85 90 95

Asn Arg Tyr Leu Ala Met Lys Glu Asp Gly Arg Leu Leu Ala Ser Lys  
100 105 110

Cys Val Thr Asp Glu Cys Phe Phe Glu Arg Leu Glu Ser Asn Asn  
115 120 125

Tyr Asn Thr Tyr Arg Ser Arg Lys Tyr Thr Ser Trp Tyr Val Ala Leu  
130 135 140

Lys Arg Thr Gly Gln Tyr Lys Leu Gly Ser Lys Thr Gly Pro Gly Gln  
145 150 155 160

Lys Ala Ile Leu Phe Leu Pro Met Ser Ala Lys Ser Glu Gln Lys Leu  
165 170 175

Ile Ser Glu Glu Asp Leu  
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<210> 3

<211> 556

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<213> chimeric sequence

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<222> (11)..(553)

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Met Gly Arg Lys Lys Arg Arg Gln Arg Arg Arg Pro Pro  
1 5 10

cag gaa ttc gcg gct gct ggt tct atc act acc ctg cca gct ctg cca 97  
Gln Glu Phe Ala Ala Ala Gly Ser Ile Thr Thr Leu Pro Ala Leu Pro  
15 20 25

gaa gac ggt ggt tct ggt gcc ttc cca cca ggt cac ttc aaa gac cca 145  
Glu Asp Gly Gly Ser Gly Ala Phe Pro Pro Gly His Phe Lys Asp Pro  
30 35 40 45

aaa cgt ctg tac tgc aaa aac ggt ggt ttc ttc ctg cgc atc cac ccc			193
Lys Arg Leu Tyr Cys Lys Asn Gly Gly Phe Phe Leu Arg Ile His Pro			
50	55	60	
gac ggc cga gtg gac ggg gtc cgc gag aag agc gac cca cac atc aaa			241
Asp Gly Arg Val Asp Gly Val Arg Glu Lys Ser Asp Pro His Ile Lys			
65	70	75	
cta caa ctt caa gca gaa gag aga ggg gtt gtg tct atc aaa gga gtg			289
Leu Gln Leu Gln Ala Glu Glu Arg Gly Val Val Ser Ile Lys Gly Val			
80	85	90	
tgt gca aac cgt tac ctt gct atg aaa gaa gat gga aga tta cta gct			337
Cys Ala Asn Arg Tyr Leu Ala Met Lys Glu Asp Gly Arg Leu Leu Ala			
95	100	105	
tct aaa tgt gtt aca gac gag tgt ttc ttt ttt gaa cga ttg gag tct			385
Ser Lys Cys Val Thr Asp Glu Cys Phe Phe Glu Arg Leu Glu Ser			
110	115	120	125
aat aac tac aat act tac cgg tca agg aaa tac acc agt tgg tat gtg			433
Asn Asn Tyr Asn Thr Tyr Arg Ser Arg Lys Tyr Thr Ser Trp Tyr Val			
130	135	140	
gca ctg aaa cga act ggg cag tat aaa ctt gga tcc aaa aca gga cct			481
Ala Leu Lys Arg Thr Gly Gln Tyr Lys Leu Gly Ser Lys Thr Gly Pro			
145	150	155	
ggg cag aaa gct ata ctt ttt ctt cca atg tct gct aag agc gaa cag			529
Gly Gln Lys Ala Ile Leu Phe Leu Pro Met Ser Ala Lys Ser Glu Gln			
160	165	170	
aaa ctc atc tct gaa gag gat ctg tga			556
Lys Leu Ile Ser Glu Glu Asp Leu			
175	180		

<210> 4  
 <211> 181  
 <212> PRT  
 <213> chimeric sequence

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 Met Gly Arg Lys Lys Arg Arg Gln Arg Arg Arg Pro Pro Gln Glu Phe  
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 20 25 30

Gly Ser Gly Ala Phe Pro Pro Gly His Phe Lys Asp Pro Lys Arg Leu  
35 40 45

Tyr Cys Lys Asn Gly Gly Phe Phe Leu Arg Ile His Pro Asp Gly Arg  
50 55 60

Val Asp Gly Val Arg Glu Lys Ser Asp Pro His Ile Lys Leu Gln Leu  
65 70 75 80

Gln Ala Glu Glu Arg Gly Val Val Ser Ile Lys Gly Val Cys Ala Asn  
85 90 95

Arg Tyr Leu Ala Met Lys Glu Asp Gly Arg Leu Leu Ala Ser Lys Cys  
100 105 110

Val Thr Asp Glu Cys Phe Phe Glu Arg Leu Glu Ser Asn Asn Tyr  
115 120 125

Asn Thr Tyr Arg Ser Arg Lys Tyr Thr Ser Trp Tyr Val Ala Leu Lys  
130 135 140

Arg Thr Gly Gln Tyr Lys Leu Gly Ser Lys Thr Gly Pro Gly Gln Lys  
145 150 155 160

Ala Ile Leu Phe Leu Pro Met Ser Ala Lys Ser Glu Gln Lys Leu Ile  
165 170 175

Ser Glu Glu Asp Leu  
180

<210> 5  
<211> 146  
<212> PRT  
<213> Bos taurus

<400> 5  
Pro Ala Leu Pro Glu Asp Gly Ser Gly Ala Phe Pro Pro Gly His  
1 5 10 15

Phe Lys Asp Pro Lys Arg Leu Tyr Cys Lys Asn Gly Gly Phe Phe Leu  
20 25 30

Arg Ile His Pro Asp Gly Arg Val Asp Gly Val Arg Glu Lys Ser Asp  
35 40 45

Pro His Ile Lys Leu Gln Leu Gln Ala Glu Glu Arg Gly Val Val Ser

50

55

60

Ile Lys Gly Val Cys Ala Asn Arg Tyr Leu Ala Met Lys Glu Asp Gly  
65 70 75 80

Arg Leu Leu Ala Ser Lys Cys Val Thr Asp Glu Cys Phe Phe Glu  
85 90 95

Arg Leu Glu Ser Asn Asn Tyr Asn Thr Tyr Arg Ser Arg Lys Tyr Ser  
100 105 110

Ser Trp Tyr Val Ala Leu Lys Arg Thr Gly Gln Tyr Lys Leu Gly Pro  
115 120 125

Lys Thr Gly Pro Gly Gln Lys Ala Ile Leu Phe Leu Pro Met Ser Ala  
130 135 140

Lys Ser

145

<210> 6

<211> 146

<212> PRT

<213> Homo sapiens

<400> 6

Pro Ala Leu Pro Glu Asp Gly Ser Gly Ala Phe Pro Pro Gly His  
1 5 10 15

Phe Lys Asp Pro Lys Arg Leu Tyr Cys Lys Asn Gly Gly Phe Phe Leu  
20 25 30

Arg Ile His Pro Asp Gly Arg Val Asp Gly Val Arg Glu Lys Ser Asp  
35 40 45

Pro His Ile Lys Leu Gln Leu Gln Ala Glu Glu Arg Gly Val Val Ser  
50 55 60

Ile Lys Gly Val Cys Ala Asn Arg Tyr Leu Ala Met Lys Glu Asp Gly  
65 70 75 80

Arg Leu Leu Ala Ser Lys Cys Val Thr Asp Glu Cys Phe Phe Glu  
85 90 95

Arg Leu Glu Ser Asn Asn Tyr Asn Thr Tyr Arg Ser Arg Lys Tyr Thr  
100 105 110

Ser Trp Tyr Val Ala Leu Lys Arg Thr Gly Gln Tyr Lys Leu Gly Ser  
115 120 125

Lys Thr Gly Pro Gly Gln Lys Ala Ile Leu Phe Leu Pro Met Ser Ala  
130 135 140

Lys Ser  
145

<210> 7  
<211> 140  
<212> PRT  
<213> Bos taurus

<400> 7  
Phe Asn Leu Pro Leu Gly Asn Tyr Lys Lys Pro Lys Leu Leu Tyr Cys  
1 5 10 15

Ser Asn Gly Gly Tyr Phe Leu Arg Ile Leu Pro Asp Gly Thr Val Asp  
20 25 30

Gly Thr Lys Asp Arg Ser Asp Gly His Ile Gln Leu Phe Leu Cys Ala  
35 40 45

Glu Ser Ile Gly Glu Val Tyr Ile Lys Ser Thr Glu Thr Gly Gln Phe  
50 55 60

Leu Ala Met Asp Thr Asp Gly Leu Leu Tyr Gly Ser Gln Thr Pro Asp  
65 70 75 80

Glu Glu Cys Leu Phe Leu Glu Arg Leu Glu Glu Asn His Tyr Asn Thr  
85 90 95

Tyr Ile Ser Lys Lys His Ala Glu Lys His Trp Phe Val Gly Leu Lys  
100 105 110

Lys Asn Gly Arg Ser Lys Leu Glu Pro Arg Thr His Phe Gly Gln Lys  
115 120 125

Ala Ile Leu Phe Leu Pro Leu Pro Val Ser Ser Asp  
130 135 140

<210> 8  
<211> 140  
<212> PRT  
<213> Homo sapiens

<400> 8

Phe Asn Leu Pro Pro Gly Asn Tyr Lys Lys Pro Lys Leu Leu Tyr Cys  
1 5 10 15

Ser Asn Gly Gly His Phe Leu Arg Ile Leu Pro Asp Gly Thr Tyr Asp  
20 25 30

Gly Thr Arg Asp Arg Ser Asp Gln His Ile Gln Leu Gln Leu Ser Ala  
35 40 45

Glu Ser Tyr Gly Glu Tyr Tyr Ile Lys Ser Thr Glu Thr Gly Gln Tyr  
50 55 60

Leu Ala Met Asp Thr Asp Gly Leu Leu Tyr Gly Ser Gln Thr Pro Asn  
65 70 75 80

Glu Glu Cys Leu Phe Leu Glu Arg Leu Glu Glu Asn His Tyr Asn Thr  
85 90 95

Tyr Ile Ser Lys Lys His Ala Glu Lys Asn Trp Phe Tyr Gly Leu Lys  
100 105 110

Lys Asn Gly Ser Cys Lys Arg Gly Pro Arg Thr His Tyr Gly Gln Lys  
115 120 125

Ala Ile Leu Phe Leu Pro Leu Pro Tyr Ser Ser Asp  
130 135 140

<210> 9

<211> 60

<212> PRT

<213> Drosophila sp.

<400> 9

Arg Lys Arg Gly Arg Glu Thr Tyr Thr Arg Tyr Gln Thr Leu Glu Leu  
1 5 10 15

Glu Lys Glu Phe His Phe Asn Arg Tyr Leu Thr Arg Arg Arg Arg Ile  
20 25 30

Glu Ile Ala His Ala Leu Cys Leu Thr Glu Arg Gln Ile Lys Ile Trp  
35 40 45

Phe Gln Asn Arg Arg Met Lys Trp Lys Lys Glu Asn  
50 55 60

<210> 10  
<211> 60  
<212> PRT  
<213> Drosophila sp.

<400> 10  
Arg Lys Arg Gly Arg Gln Thr Tyr Thr Arg Tyr Gln Thr Leu Glu Leu  
1 5 10 15

Glu Lys Glu Phe His Phe Asn Arg Tyr Leu Thr Arg Arg Arg Arg Ile  
20 25 30

Glu Ile Ala Tyr Ala Leu Cys Leu Thr Gln Arg Gln Ile Lys Ile Trp  
35 40 45

Phe Ala Asn Arg Arg Met Lys Trp Lys Lys Glu Asn  
50 55 60

<210> 11  
<211> 60  
<212> PRT  
<213> Drosophila sp.

<400> 11  
Arg Lys Arg Gly Arg Gln Thr Tyr Thr Arg Tyr Gln Thr Leu Glu Leu  
1 5 10 15

Glu Lys Glu Phe His Phe Asn Arg Tyr Leu Thr Arg Arg Arg Arg Ile  
20 25 30

Glu Ile Ala His Ala Leu Cys Pro Pro Glu Arg Gln Ile Lys Ile Trp  
35 40 45

Phe Gln Asn Arg Arg Met Lys Trp Lys Lys Glu Asn  
50 55 60

<210> 12  
<211> 16  
<212> PRT  
<213> Drosophila sp.

<400> 12  
Arg Gln Ile Lys Ile Trp Phe Pro Asn Arg Arg Met Lys Trp Lys Lys  
1 5 10 15

<210> 13  
<211> 16  
<212> PRT  
<213> Drosophila sp.

<400> 13  
Arg Gln Pro Lys Ile Trp Phe Pro Asn Arg Arg Lys Pro Trp Lys Lys  
1 5 10 15

<210> 14  
<211> 16  
<212> PRT  
<213> Drosophila sp.

<400> 14  
Arg Gln Ile Lys Ile Trp Phe Gln Asn Met Arg Arg Lys Trp Lys Lys  
1 5 10 15

<210> 15  
<211> 16  
<212> PRT  
<213> Drosophila sp.

<400> 15  
Arg Gln Ile Lys Ile Trp Phe Gln Asn Arg Arg Met Arg Trp Arg Arg  
1 5 10 15

<210> 16  
<211> 16  
<212> PRT  
<213> Drosophila sp.

<400> 16  
Arg Arg Trp Arg Arg Trp Trp Arg Arg Trp Trp Arg Arg Trp Arg Arg  
1 5 10 15

<210> 17  
<211> 86  
<212> PRT  
<213> Human immunodeficiency virus

<400> 17  
Met Glu Pro Val Asp Pro Arg Leu Glu Pro Trp Lys His Pro Gly Ser

1

5

10

15

Gln Pro Lys Thr Ala Cys Thr Asn Cys Tyr Cys Lys Lys Cys Cys Phe  
20 25 30

His Cys Gln Val Cys Phe Ile Thr Lys Ala Leu Gly Ile Ser Tyr Gly  
35 40 45

Arg Lys Lys Arg Arg Gln Arg Arg Arg Pro Pro Gln Gly Ser Gln Thr  
50 55 60

His Gln Val Ser Leu Ser Lys Gln Pro Thr Ser Gln Ser Arg Gly Asp  
65 70 75 80

Pro Thr Gly Pro Lys Glu  
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<210> 18

<211> 60

<212> DNA

<213> primer

<220>

<221> CDS

<222> (1)..(48)

<400> 18

cca atg tct gct aag agc gaa cag aaa ctc atc tct gaa gag gat ctg 48  
Pro Met Ser Ala Lys Ser Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu  
1 5 10 15

tgaaaagcttg gg

60

<210> 19

<211> 16

<212> PRT

<213> primer

<400> 19

Pro Met Ser Ala Lys Ser Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu  
1 5 10 15

<210> 20

<211> 60

<212> DNA

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<213> primer

<400> 20
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<211> 59
<212> DNA
<213> primer

<220>
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<222> (11)..(58)

<400> 21
ggttagtccat atg ggc cgc aaa aaa cgc cgc cag cgc cgc cgc ccg ccg      49
      Met Gly Arg Lys Lys Arg Arg Gln Arg Arg Arg Pro Pro
      1           5           10

cag gaa ttc c
Gln Glu Phe
      15

                                         59

<210> 22
<211> 16
<212> PRT
<213> primer

<400> 22
Met Gly Arg Lys Lys Arg Arg Gln Arg Arg Arg Pro Pro Gln Glu Phe
      1           5           10           15

<210> 23
<211> 16
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<213> primer

<400> 23
ggaattcctg cggccgg
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<210> 24
<211> 25
<212> DNA
<213> primer

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<222> (2)..(25)

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Glu Phe Ala Ala Ala Gly Ser Ile  
1 5

<210> 25  
<211> 8  
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<213> primer

<400> 25  
Glu Phe Ala Ala Ala Gly Ser Ile  
1 5

<210> 26  
<211> 81  
<212> DNA  
<213> primer

<220>  
<221> CDS  
<222> (11)..(79)

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Met Arg Gln Ile Lys Ile Trp Phe Gln Asn Arg Arg Met  
1 5 10

aag tgg aaa aag gcg gct gct ggt tct atc ac  
Lys Trp Lys Lys Ala Ala Ala Gly Ser Ile 81  
15 20

<210> 27  
<211> 23  
<212> PRT  
<213> primer

<400> 27  
Met Arg Gln Ile Lys Ile Trp Phe Gln Asn Arg Arg Met Lys Trp Lys  
1 5 10 15

Lys Ala Ala Ala Gly Ser Ile

20